

ART XXIV.—*Further Descriptions of the Tertiary  
Polyzoa of Victoria.*

PART XI.

By C. M. MAPLESTONE.

(With Plates XXXVII. - XLVIII.).

[Read 13th October, 1910.]

*Catenicella bairnsdalei*, n. sp. (Pl. XXXVII., Fig. 1).

Zooecium oval, broad, compact; with eleven narrow fenestrae. Thyrostome arched above, straight below; distal margin raised. Two long, deep, uncalcified areas situate laterally: the distal angles produced into acute processes, probably avicularian.

Locality.—Mitchell River (J. Dennant).

A single specimen. This is a very solid looking form; the proximal fenestrae are well defined, the distal ones less so and the interspaces there have the appearance of transverse ribs stretching across the frontal wall. The uncalcified lateral areas are surrounded with raised, smooth walls: those on the right hand side are merged into one long area.

*Catenicella ampla*, Waters. (Pl. XXXVII., Fig. 2).

I have included an illustration of a zooecium of this species as the specimen is much more perfect than any figured in Dr. MacGillivray's Monograph.

*Catenicella cuneiformis*, n. sp. (Pl. XXXVII., Fig. 3).

Zooecium cuneate, ventricose, narrow; with eleven fenestrae. Thyrostome very large, arched above; lateral and distal margins raised; a very small sinus in the proximal margin. An acute spinous process at each distal angle with an avicularium below.

Locality.—Clifton Bank, Muddy Creek (Dr. Hall).

The very large thyrostome with raised margin, the narrow fenestrae and the angular spinous processes separate this from other species.

**Catenicella morningtoniensis**, n. sp.

(Pl. XXXVII., Fig. 4).

Zooecium oval, elongate, with wide lateral processes and nine to fifteen very narrow fenestrae. Thyrostome arched above, straight below, with a longitudinal ridge above it. Two to three elongated depressed uncalcified areas in the lateral processes and one on each side above the thyrostome; a spinous process on the outer angles.

Locality. Balcombe Bay, Mornington (Dr. Hall).

This is near *C. marginata*, Waters, but the number of the fenestrae is much greater, they are narrower than in that species, and the uncalcified areas on the margin are more numerous.

**Catenicella concinna**, n. sp. (Pl. XXXVII., Fig. 5).

Zooecium cuneate, ventricose, smooth: with nine fenestrae, very slightly depressed. Thyrostome arched above; lower margin incurved in the centre; a broad ridge above. Lateral processes are either absent or aborted. Avicularia (?) at distal angles.

Locality.—Mornington (Dr. Hall).

This is a very distinct species. It is exceedingly ventricose, with a smooth, shining surface, and there are apparently no lateral processes. The distal angles are not quite perfect, but present indications of having borne avicularia.

**Catenicella elegantissima**, n. sp. (Pl. XXXVIII., Fig. 6).

Ooecium ovoid, smooth; surmounted by a flattened umbonate process, below which the surface is slightly depressed over about a third of the ooecium; in the depression there is near the proximal margin a curved row of about 20 small pores, above which is a similarly curved row of 5 or 6 larger pores. Ooecial opening broad; proximal margin slightly incurved; a broad sinus in the distal margin. Five narrow fenestrae and a small depressed uncalcified area on each side, below the ooecial opening. Zooecia unknown.

Locality.—Spring Creek (Dr. Hall).

This is a very elegant form, its great peculiarity is the depressed area on the distal part, perforated with two rows of pores. This part was probably covered with an epitheca when living. The sinus in the distal margin of the ooeccial opening is peculiar to this species.

**Catenicella minutissima**, n. sp. (Pl. XXXVII., Fig. 7).

Ooeccium pyriform, with a slightly depressed falciform granular area on each side. Nine very narrow fenestrae below the ooeccial opening. Ooeccial opening very wide; proximal margin extended upwards in the median part causing the opening to be narrow and curved downwards at the ends: an irregularly shaped lateral process on each side. Zooecia unknown.

Locality.—Campbell's Point (J. F. Mulder).

This is an extremely small ooeccium; I know of no species of *Catenicella* that has zooecia so minute as would correspond with the dimensions of this ooeccium. The lateral processes shown are probably part of the matrix of the formation and not really a part of the ooeccium.

**Catenicella longispinosa**, n. sp. (Pl. XXXVII., Fig. 8).

Zooecium oval, ventricose; with wide lateral processes and seven large fenestrae. Thyrostome arched and raised above, with a very small sinus in the proximal margin. Two deep depressed uncalcified areas on each side. A long acute bilaminate spine on the distal angles.

Locality.—Campbell's Point. (J. F. Mulder).

This is a large species and is distinguished by the very long distal bilaminate spines which clearly show the manner of their formation as the sides do not completely join, but leave, in the left-hand one, a long narrow cavity and in the other a triangular hollow: the spine on the extreme right hand has not developed completely and may possibly indicate the presence of an avicularium in lieu of an elongated spine.

**Strophipora triangularis**, n. sp.

(Pl. XXXVIII., Figs. 9 and 9a).

Ooeccium ovoid, with two rounded ridges descending from near the summit downwards and outwards, terminating on a

level with the proximal margin of the ooecial opening on each side, leaving a depressed triangular area between; a large slightly depressed pyriform area on each side beyond the ridges. Ooecial opening large, transversely elliptical: a single rounded foramen below it on a slightly elevated umbo on the median line. Dorsal surface smooth, with two very slightly raised narrow ridges descending from the apex with a hastate depressed area between; at the proximal end of which there is a subtriangular area very slightly calcified and almost transparent. Around the sides and crossing over near the apex is a narrow ridge, probably the dorsal margin of the depressed areas seen on the front view. Zooecia unknown.

Locality.—Campbell's Point (J. F. Mulder).

The slide upon which these two specimens are, was given to me by Mr. Mulder, and I consider them as exhibiting the frontal and dorsal aspect of the one species, though not having exactly the same outline; the difference is not more than can be seen in the ooecia of other species of Catenicellidae, and as the dorsal surface has a somewhat depressed triangular area similar to that on the frontal surface I do not think there can be any doubt about it. The small round foramen on the raised umbo is analogous to that occurring on the frontal ridge of the zooecia of the other species of *Strophipora*.

### *Strophipora laevis*, n. sp. (Pl. XXXVIII., Fig. 10).

Zooecium ovate, smooth. Thyrostome large, suborbicular; proximal margin with a broad, flat, protruding denticle. The central portion of the zooecium bears a slightly raised ridge extending from the thyrostome to near the proximal part, with a pore below the thyrostome. A curved spinous process on each side extending to the distal end of the zooecium.

Locality.—Mornington (Dr. Hall).

A single specimen. The zooecium is very smooth and the ridge in the centre is very slightly raised, but its presence and that of the pore show it to be a *Strophipora* though these characteristics are less marked than in the other species. The curved spinous processes arching over the distal part are peculiar to this species.

**Claviporella bicornis**, n. sp. (Pl. XXXVIII., Fig. 11).

Ooecium elongated, irregularly oval. Ooecial opening large, curved distally; proximal margin denticulate. On each side of the ooecial opening there is a large, thick, spinous process, the left one straight, the right-hand one curved. Below the ooecial opening on each side is a short cylindrical adnate process, with a truncated end, the right-hand one the longer. Zooecia unknown.

Locality.—Campbell's Point. (J. F. Mulder.)

This is a very peculiar form owing to the presence of the large spinous process on each side of the ooecial opening, similar, but much larger in proportion, to those on the ooecia of *Cl. aurita* and *Cl. geminata* (recent species). The short truncate processes below the ooecial opening are peculiar to it, they are possibly avicularian. The denticulation on the proximal margin of the ooecial opening may possibly be caused by the fracture of the frontal wall of the ooecium, but the inner edges of the denticles have 2.3 acute points, whereas if it had been caused by fracture the edges would most probably have been straight, or nearly so. The irregular flat curved process on the distal end may be a portion of the matrix of the deposit, and not actually belonging to the specimen.

**Claviporella airensis**, n. sp. (Pl. XXXVIII., Fig. 12).

Zooecia irregularly cuneate; below the thyrostome is a small elongated, vertical slit or pore. Thyrostome arched above; a deep rounded sinus in the proximal margin. Ooecium globose, smooth, with faint lines radiating from the ooecial opening, which is of the same shape as the thyrostomes, but larger, and loftier in proportion.

Locality.—Aire coastal beds (Dr. Hall).

A single internode composed of three zooecia, and an ooecium; the zooecium proximal to the ooecium is apparently double as there are two pores on the raised front wall, but, as there is no thyrostome to either portion, it probably represents two imperfectly developed zooecia. This is near *Cl. longicollis* McG., but in this species there is only a small slit in the place of the larger depressed banded area in that species.

**Vittaticella cruciformis**, n. sp. (Pl. XXXVIII., Fig. 13).

Zooecia cuneate, elongate, ventricose. Thyrostome arched above, straight below. Large, broad lateral vittae with 4 to 6 large circular fenestrae (?).

Locality.—Bairnsdale (J. Dennant).

A portion of the specimen is partially obscured by matrix. It is cruciform in shape and is composed of 3 (possibly 4) zooecia, and in the centre there is a rounded elevation which may be an oecium. It is distinguished from all other Vittaticellae by the very broad vittae with a few, comparatively large, fenestrae (?) covered with an ectocyst in lieu of the small pores usually present in the vittae of the other species.

**Brettia brevis**, n. sp. (Pl. XXXVIII., Fig. 14).

Zooecia cuneiform, subtubular, ventricose. Thyrostome orbicular, surrounded by a wide peristome, the margin of which bears very short blunt spinous processes.

Locality.—Spring Creek (Dr. Hall).

This is a very interesting form which I assign to *Brettia*, though it is very much shorter in proportion to its width than any of the recent species, and it is much more highly calcified than they are. The genus has not hitherto been recorded as fossil.

**Caberea morningtoniensis**, n. sp.

(Pl. XXXIX., Fig. 15).

Zoarium ligulate. Zooecia multiserial. Aperture large, oval, elongate; margins raised, very broad and granulated; a spine at each distal angle; numerous small oval avicularia scattered irregularly on the surface of the zoarium. A very large pedunculate avicularium on one side of the aperture. Ooecia mitri-form.

Locality.—Balcombe Bay, Mornington (Dr. Hall).

This is near *C. grandis*, Hincks., but differs from it in the very broad granulated margins of the aperture, in the absence of any scutum and in the presence of the very large pedunculate avicularia on the side of the aperture; these are, most of

them, broken off, leaving a portion of the tubular stem exposed, but one on the left-hand side is preserved. The basal wall of an ooeceium is seen above the distal end of the aperture of uppermost median zooeceium. The specimen is not in very good condition, portions of it being obscured by sandy particles, but there is no doubt as to its specific distinction.

**Farcimia airensis**, n. sp. (Pl. XL, Fig. 16).

Zoarium erect, free. Zooecea long and narrow, with raised margins. Aperture elongated, oval; sides straight; ends curved, proximal end narrower than the distal one; margins raised. Numerous large spatulate avicularia on one side of the zoarium.

Locality.—Aire River, Cape Otway (Dr. Hall).

This is near *F. lusoria*, Waters, but the zooecea are longer and narrower, and the large spatulate avicularia are peculiar to it.

**Menipea uniserialis**, n. sp. (Pl. XL, Fig. 17).

Zoarium erect; the zooecea in single series. Zooecea oval with large elliptical aperture, which at the distal end bears, below the level of the margin, a median broad process leaving a narrow space on each side; the inner lateral and proximal margins of aperture granulated; a very small spine on one side of the margin near the distal end; a very large sessile avicularium on the other side of the zooecea.

Locality.—Aire coastal beds (Dr. Hall).

This species I assign to *Menipea*, though the zooecea are in single series, instead of the usual bi- or multiserial series, as it has a large sessile avicularium on one side of the zooecea.

SYNAPTACELLIDAE, nov. fam.

Zoaria free, rigid. Zooecea in single series.

The zoarial character of the species I have placed in this family is quite distinct from that of the other families in which the zooecea are in single series. In Catenicellidae the zooecea are joined together by flexible chitinous tubes. In Eucratiidae they are only sometimes uniserial, and are subcalcareous, not rigidly connected.

In neither of these families could they be included. I am aware that it is not considered advisable to institute a new family, or even a new genus, upon purely zoarial characters, especially as, at the present time, the structure of the operculum, and whether the rosette plates have a single pore, or many, are considered by some to be of equal, if not greater, taxonomic value than the more evident zooecial characteristics, and that zoarial form is almost entirely ignored; but the species here described, six in number, are so very distinctive in their zoarial character that I consider the creation of a new family for their reception is quite justified.

SYNAPTACELLA, nov. gen.

Character as for family.

Zooecia ovoid, pyriform or cuneate. Aperture large, oval; margins raised.

The zooecial characteristics of the species of this genus vary somewhat, but they all resemble one another to such an extent that, taking into consideration their uniform zoarial character, I consider they may properly be placed in the one genus.

*Synaptacella asymmetrica*, n. sp. (Pl. XL, Fig. 19).

Zoarium free. Zooecia in single series. Zooecia ovoid and cuneiform; aperture oval or suborbicular, small and asymmetrical; margins thick and raised; a large round depressed area in the proximal part of the basal wall, and a small one in the distal end; an avicularium at the distal part of the zooecia on the side towards which the aperture is directed.

Locality.—Spring Creek (Dr. Hall).

The specimen consists of two zooecia only, the proximal one not quite perfect, and the distal one has a rounded ridge on one side. The comparatively small asymmetrical aperture with the very thick raised margin and the small lateral avicularia are distinctive.

*Synaptacella gibbosa*, n. sp. Pl. XL, Fig. 20).

Zoarium free. Zooecia in single series. Zooecia irregularly cuneiform, asymmetrical; aperture elongated, subtriangular, rounded



distally : margins raised, broad, with a narrow inner rim ; a small spine on each side near the distal end ; an ovoid avicularium below.

Locality.—Griffin's, Moorabool (Dr. Hall).

The specimen consists of two zooecia only. Its chief peculiarity is the asymmetrical form of the zooecia, one side is slightly curved inwardly, the other side projects laterally, forming an obtuse angle. The bases of the marginal spines are preserved on the proximal zooecium only and on that one the avicularium is broken off.

**Synaptacella crassimarginata**, n. sp. (Pl. XL., Fig. 21).

Zoarium free, branching. Zooecia in single series, ovoid, contracted proximally ; aperture oval, with very wide, raised margins ; a large rounded depressed area in the proximal part of the basal wall, and two small narrow ones distally ; a raised ovoid avicularium below.

Locality.—Griffin's, Moorabool (Dr. Hall).

This specimen consists of three zooecia, the two distal ones branching from the proximal one.

**Synaptacella ovalis**, n. sp. (Pl. XL., Fig. 18).

Zoarium free. Zooecia in single series ; ovoid ; aperture oval, with a raised double margin ; an avicularium at each distal angle, and sometimes one on an umbo below the aperture ; a spine (?) above the centre of the distal edge of the aperture.

Locality.—Griffin's, Moorabool (Dr. Hall).

This also is a small fragment, consisting of two zooecia only. The aperture is a very regular oval ; the avicularia on the distal angles are indicated by short tubular processes, which may be the bases of pedunculate avicularia, and the process on the distal edge of the aperture of the upper zoarium may represent either the base of a spine or a small avicularium.

**Synaptacella dennanti**, n. sp. (Pl. XLI., Fig. 22).

Zoarium free. Zooecia in single series ; ovoid, elongate, contracted proximally ; aperture oval, occupying nearly two-thirds

of the length of the zooecia; margins raised; a small circular avicularium below the aperture.

Locality.—Mitchell River (J. Dennant).

A single specimen, consisting of two zooecia only. The avicularium on the distal zooecium is broken away, showing the form of the avicularian chamber.

*Synaptacella recta*, n. sp. (Pl. XLI., Fig. 23).

Zoarium free, erect. Zooecia in single series, pyriform; aperture ovoid; margins raised. Small oval avicularia on a slightly raised umbo below the aperture.

Locality.—Griffin's, Moorabool (Dr. Hall).

The specimen consists of two zooecia only; it is not in very good preservation, as there is a longitudinal fracture running through the lower zooecium, and the margins of the aperture are not quite perfect, but it is quite distinct from the other species.

*Cellularia balcomiensis*, n. sp. (Pl. XLI., Fig. 24).

Zoarium free. Zooecia biserial, ovoid, contracted proximally; aperture oval, elongated; margins raised and thickened; a large round, depressed area in the proximal part of the basal wall, with two smaller ones distally. No avicularia.

Locality.—Balcombe Bay, Mornington (Dr. Hall).

This is a very small form, and though not in good preservation, is quite distinct from *C. triangulata*, Mapl., the only other species hitherto recorded from our Tertiary formations. The two specimens figured differ somewhat, one being in the distal part almost in single series, but I consider they are the same species.

*Cellularia mooraboolensis*, n. sp. (Pl. XLI., Fig. 25).

Zoarium free. Zooecia biserial, directed alternately outwards, elongated, with oval aperture; margins raised and wide, with a narrow inner rim; a spine on each side near the distal end; a circular raised avicularium below the aperture.

Locality.—Griffin's, Moorabool (Dr. Hall).

A single specimen, consisting of five zooecia ; it differs from *C. balcomiensis* in the distal part of the zooecia, being directed alternately outwards, and in the presence of avicularia.

**Membranipora laevissima**, n. sp. (Pl. XLI., Fig. 26).

Zoarium encrusting. Zooecia undefined, slightly calcified, very shallow ; aperture oval, with smooth margins ; interspaces only slightly raised, smooth, with small oval avicularia between the zooecia.

Locality.—Wilkinson's No. 4 (Dr. Hall).

A single specimen growing on a fragment of a bivalve shell. It is very flat and thin looking, more like a thin gelatinous film than a calcified structure, the surface of the shell is exposed in the apertures, and there is no trace of any basal wall, which was probably membranous.

**Membranipora ovifera**, n. sp. (Pl. XLII., Fig. 27).

Zoarium encrusting. Zooecia irregularly oval, in transverse rows ; aperture large ; margins raised, flat ; scattered vicarious oviform avicularia, with oval mandibular area.

Locality.—Orphanage Hill, Geelong (Dr. Hall).

This in appearance resembles some specimens of *M. gregsoni*, McG., but the form of the avicularia is very different ; all, except one, of the apertures are filled with fine particles of sand, and it is interesting to note that one of the zooecia is regenerated, the margin of the later formed one showing within that of the older.

**Steganoporella dennanti**, n. sp. (Pl. XLIII., Fig. 28).

Zoarium in vincularian form. Zooecia dimorphic, elongated, arched and overlapping distally. Cryptocyst depressed, occupying about half the length of the zooecia, perforated with very small pores ; a rounded opesiule on each side at the distal end ; median process straight ; oral shelf forming a subtriangular or cordate arch. In the " B " zooecia the polypide tube descends distally to the basal floor.

" A " zooecia 1.2 mm. long, 0.4 to 0.6 mm. wide.

" B " zooecia 1.3 mm. long, 0.7 to 0.8 mm. wide.

Locality.—Mitchell River (J. Dennant).

The frontal edges of the lateral and distal walls of the zooecia are apparently eroded, and are of a dark colour, probably the animal tissue of the polypide mineralised. The lateral and oral shelves are minutely granulated, not perforated. In the "A" zooecia the cryptocyst and the median process only are seen, the polypide tube being either hidden or broken away, but in the lower "B" zooecium, of which only the distal portion is preserved, the polypide tube is present, it descends towards the base, and is produced distally a considerable distance.

*Steganoporella bairnsdalei.* (Pl. XLIII., Fig. 28a).

Zoarium in vincularian form. Zooecia dimorphic, elongated; arched and overlapping distally. Cryptocyst depressed distally, occupying about two-thirds of the length of the zooecia; coarsely perforated. Oral arch incurved at the proximal ends. Oral shelf forming a subtriangular arch in the "B" zooecia. Polypide tube showing only as an opening near the distal margin of the cryptocyst.

"A" zooecia 1 to 1.2 mm. long, 0.4 mm. wide.

"B" zooecia 1.6 mm. long, 0.6 mm. wide.

Locality.—Mitchell River (J. Dennant).

The zooecia are smaller and narrower in proportion than those in the preceding species; the oral arch is incurved at the proximal ends, showing the condyles. The details are not well preserved, only the upper part of the polypide tube is seen in the "A" zooecia. In the right-hand upper "B" zooecium the median process extends distally beyond the opening of the polypide tube, it is straight, with projecting angles, and the oral arch is of abnormal form; the one in the "B" zooecium at the base of the specimen being of normal shape.

*Steganoporella cliftonensis*, n. sp. (Pl. XLIV., Fig. 29).

Zoarium encrusting. Zooecia dimorphic, oval, overlapping distally. Cryptocyst occupying nearly half the length of the zooecia, finely perforated. Polypide tube asymmetrical, prolonged distally; median process with flanges connecting poly-

pide tube with the distal margin of cryptocyst and the lateral walls. Oral shelf forming a subtriangular arch in the "B" zoecia, but is hardly perceptible in the "A" zoecia.

"A" zoecia 0.9 to 1.2 mm. long, 0.7 to 0.8 mm. wide.

"B" zoecia 1.5 mm. long, 0.7 to 0.8 mm. wide.

Locality.—Clifton Bank, Muddy Creek (Dr. Hall).

In this species as in *S. lateralis* the polypide tube is asymmetrical, but instead of descending abruptly to the basal wall, as in that species, it extends to a considerable distance distally. In the figure given the zoecium on the left-hand at the top is an "A" form, the others are all "B" zoecia.

### *Steganoporella corioensis*, n. sp. (Pl. XLIV., Fig. 30).

Zoarium encrusting. Zoecia dimorphic, quadrate, arched distally. Cryptocyst in the "A" zoecia occupying about a third of the area; in the "B" zoecia nearly half; in both very finely perforated. Oral shelf in the "B" zoecia forming a subtriangular arch; very narrow in the "A" zoecia. Polypide tube short; median process with flanges connecting it with distal end of cryptocyst.

"A" zoecia 1. to 1.2 mm. long, 0.5 to 0.8 mm. wide.

"B" zoecia 1.3 to 1.4 mm. long, 0.8 mm. wide.

Locality.—Corio Bay (Dr. Hall).

In this species the polypide tube is not exactly in the median line, and is inclined slightly to one side or the other. In the figure the three upper zoecia are of the "B" form, the three lower are of the "A" form.

### *Steganoporella elongata*, n. sp. (Pl. XLV., Fig. 31).

Zoarium probably in vincularian form. Zoecia dimorphic, elongate, arched and overlapping distally. Cryptocyst depressed, finely perforated; median process produced distally as a hemispherical cup, representing the polypide tube, with a sinus on each side. Oral arch in the "B" zoecia forming a subtriangular arch.

"A" zoecia 1. to 1.2 mm. long, 0.4 mm. wide.

"B" zoecia 1.5 to 1.9 mm. long, 0.6 mm. wide.

Locality.—Mornington (Dr. Hall).

This is a small fragment, apparently of vincularian form, not very well preserved, but quite distinct from the other species. The "B" zoecia are very much larger than the "A" zoecia, which latter are much narrower than those of the other species described. The polypide tube shows as a hemispherical cup on a level with the cryptocyst, and there is no indication of its connection with the basal wall.

*Thalamoporella airensis*, n. sp. (Pl. XLV., Fig. 32).

Zoarium in vincularian form. Zoecia elongate, narrow: margins raised; distal end arched, occasionally pointed. Thyrostome arched above, projecting forward; slightly curved below. Avicularia acute. Ooecia (?) cup-shaped.

Locality:—Aire coastal beds (Dr. Hall).

This is a very narrow celled species, and the zoecia vary a good deal in form and size, some are curved distally, and some, more or less pointed. The avicularium, at the top of the specimen, bears a long, apparently cylindrical, process distally, but it is not very well preserved. On one zoecium on the right-hand side is a cup-shaped process, which is probably the basal part of an ooecium.

*Thalamoporella dennanti*, n. sp. (Pl. XLVI., Fig. 33).

Zoarium encrusting, flat. Zoecia longitudinally disposed, in straight lines: margins very thin, raised. Cryptocyst flat; surface with a few small scattered pores, chiefly on the lateral margins. Thyrostome arched distally, with very thin upper margin: proximal margin curved and rounded. Ooecia globose, superimposed on the distal zoecia; basal wall with a large central foramen and a small elliptical one on each side.

Locality.—Mitchell River (J. Dennant).

In this species the lateral margins of the zoecia are very thin, and project above the flat cryptocyst: the margins of the thyrostomes are raised, the distal having a thin edge; the proximal one is rounded, and where it is broken is seen to be hollow. Only the basal walls of the ooecia are preserved, showing them to be probably globose.

**Cribrilina tenuicosta**, McG., sp. (Pl. XLVII., Fig. 34).

**Membraniporella tenuicosta**, McG.

I have included an illustration of a specimen of this species, as upon it there is an avicularium, which has not hitherto been recorded. I have assigned the species to *Cribrilina*, as it evidently belongs to it. Dr. MacGillivray was himself inclined to do the same.

**Aspidostoma otwayensis**, n. sp. (Pl. XLVII., Fig. 35).

Zoarium in vincularian form. Zooecia elongated, arched above with a thick, smooth, convex margin, which extends proximally towards the base, leaving the median portion depressed on each side, but slightly elevated in the centre. Thyrostome arched above, curved below, with a narrow lip.

Locality.—Cape Otway (Dr. Hall).

This differs from *A. airensis* from the Aire coastal beds in the distal margin of the zooecia, not being produced into a conical process, and the absence of a sinus at the angles of the proximal margin of the thyrostome, and the absence of avicularia.

**Phylactella bairnsdalei**, n. sp. (Pl. XLVII., Fig. 36).

Zoarium encrusting. Zooecia undefined, frontal surface perforated with large, somewhat regularly disposed, elongated pores: two small raised cylindrical processes, with a pore on the summit below the thyrostome; one close to peristome, the other lower down and on one side. Peristome tubular, projecting forwards and upwards, concealing the thyrostome.

Locality.—Mitchell River (J. Demant).

The specimen is small, only three peristomes are present, and there are no pores upon them. The pores are arranged in more or less regular longitudinal order. This is possibly the species from the same locality alluded to by Dr. MacGillivray as being too imperfect for description.

**Monoporella venusta**, Eichwald. (Pl. XLVII., Fig. 37).

*Lepralia venusta* Eichwald. Manzoni. Sitzb. d. mathem.-naturw., Cl. lix., Bd. 1., Abth. p. 20 (1869).

*Lepralia venusta* Eichwald. *Lethaea Rossica*, vol. iii., p. 29, Tav. ii., fig. 2.

Manzoni, in a paper upon the Italian Pliocene Polyzoa (*Briozoi Pliocenici Italiani*) records, in the reference quoted, the occurrence of this species in Italy. I have not seen the reference to "*Lethaea Rossica*," which Manzoni quotes in his paper.

The following is a translation of the principal part of Manzoni's description:—"Cells (zoecia) quincuncially disposed, rhombic-ovate, rounded distally, partly punctate; aperture terminal, semicircular or subrotund; peristome elevated, six spines above. Three thick smooth costae, central one attenuated towards the base, lateral ones divergent, surface between the costae irregularly punctate, moderately convex, depressed towards the base." He states the cells (zoecia) are very large, the dimensions being—height 1 mm., width two-thirds of a millimetre.

Locality.—Campbell's Point (J. F. Mulder).

The specimen of this species is upon a slide given to me by Mr. Mulder. It is only an imperfect front wall of a zoecium; it agrees in every respect with Manzoni's description and figure, but only the central costa is present, the lateral ones have been broken off. It is 0.8 mm. long, and if perfect would have been quite 1 mm. long, if not more. The punctations are mostly small hemispherical pits, with a pore in the centre, but in one part they are crowded and quadrate in shape, and there are traces of the six spines on the upper margin of the peristome.

### *Inversiula airensis*, n. sp. (Pl. XLVIII., Fig. 38).

Zoarium encrusting. Zoecia ovoid, surface roughly granulated. Thyrostome transversely elliptical, with the proximal margin more curved than the distal one: a short spinous process, perforated at the summit, on each side below the thyrostome.

Locality.—Wilkinson's No. 4, Aire coastal beds (Dr. Hall).

This species is very near *I. nutrix*, recorded by Jullien<sup>1</sup>, but it has not the central "*fenestrule semilunaire*" of that species.

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<sup>1</sup> "Cap Horn," p. 44, pl. 4, fig. 8.



Canu, in "Bryozoaires fossiles de l'Argentine"<sup>1</sup>, gives a figure of a form which he says is Jullien's species. I do not consider that this is correct, as it has no fenestrule, but it is more nearly allied to *I. airensis*, though it differs from it, as the spinous perforated processes are situated by the side of the thyrostome above the proximal margin, and not below it, as in both *I. nutrix* and *I. airensis*.

*Inversiula quadricornis*, n. sp. (Pl. XLVIII., Fig. 39).

Zoarium encrusting. Zoecia oval, ventricose: surface perforated with radially, but irregularly arranged, narrow slits. Thyrostome broad, distal margin nearly straight, proximal margin curved; margins thick: two tubular upright cylindrical processes on each side: a lunate, slightly depressed area below. Ooecium globose (?).

Locality.—Wilkinson's No. 4, Aire coastal beds (Dr. Hall).

A small fragment of very peculiar structure. The zoecia are very ventricose, almost globular; the form of the thyrostome is not very distinctly shown, as in the left-hand one, the right-hand margin is obscured by a fragment of calcareous matter, and of the right-hand one there is only a side view. The four tubular processes situated close to the margins of the thyrostome are characteristic. In the lower part of the specimen there is a circular depression surrounded by a raised margin which I consider is the basal wall of an ooecium; the oval depression on the right-hand side is apparently the basal part of a zoecium, but what the small shallow round depression represents is not evident. The whole structure is very unique, but I think it may properly be assigned to *Inversiula*, as the thyrostome has the proximal margin more curved than the distal one, and it has the same kind of tubular spinous processes as the other species have.

These species are of interest because, owing to the proximal margins of the thyrostomes being more curved than the distal, the opercula were probably hinged at the distal, instead of at the proximal margin, as in almost all other cheilostomata.

1 "Anales del Museo Nacional de Buenos Aires"  
Tomo xvii. (Ser. 3a. t. X.), p. 283, pl. vi., fig. 8.

## EXPLANATION OF PLATES XXXVII.-XLVIII.

## PLATE XXXVII.

Fig. 1—	<i>Catenicella bairnsdalei.</i>	× 48.
2—	„ <i>ampla.</i>	„
3—	„ <i>cuneiformis.</i>	„
4—	„ <i>morningtoniensis.</i>	„
5—	„ <i>concinna.</i>	„
6—	„ <i>elegantissima.</i>	„
7—	„ <i>minutissima.</i>	„
8—	„ <i>longispinosa.</i>	„

## PLATE XXVIII.

Fig. 9—	<i>Strophipora triangularis.</i>	× 48.
9A—	„ „ dorsal surface.	× 48.
10—	„ <i>laevis</i>	× 48.
11—	<i>Claviporella bicornis.</i>	„
12—	„ <i>airensis.</i>	„
13—	<i>Vittaticella cruciformis.</i>	„
14—	<i>Brettia brevis.</i>	„

## PLATE XXXIX.

Fig. 15—	<i>Caberea morningtoniensis.</i>	× 77.
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## PLATE XL.

Fig. 16—	<i>Farcimia airensis.</i>	× 26.
17—	<i>Menipea uniserialis.</i>	× 48.
18—	<i>Synaptacella ovalis.</i>	× 77.
19—	„ <i>asymmetrica.</i>	„
20—	„ <i>gibbosa.</i>	„
21—	„ <i>crassimarginata.</i>	„

## PLATE XLI.

Fig. 22—	<i>Synaptacella dennanti.</i>	× 77.
23—	„ <i>recta.</i>	„
24—	<i>Cellularia balcomiensis.</i>	× 48.
25—	„ <i>mooraboolensis.</i>	× 77.

PLATE XLII.

- Fig. 26—*Membranipora laevis*. × 48.  
27— „ *ovifera*. × 26.

PLATE XLIII.

- Fig. 28—*Steganoporella dennanti*. × 26.  
28A— „ *bairnsdalei*. „

PLATE XLIV.

- Fig. 29—*Steganoporella cliftonensis*. × 26.  
30— „ *corioensis*. „

PLATE XLV.

- Fig. 31—*Steganoporella elongata*. × 26.  
32—*Thalamoporella airensis*. „

PLATE XLVI.

- Fig. 33—*Thalamoporella dennanti*. × 26.

PLATE XLVII.

- Fig. 34—*Cribrilina tenuicosta*. × 26.  
35—*Aspidostoma otwayensis*. „  
36—*Phylactella bairnsdalei*. „  
37—*Monoporella venusta*. × 48.

PLATE XLVIII.

- Fig. 38—*Inversiula airensis*. × 48.  
39— „ *quadricornis*. „